# Homework 8

## Due Monday, February 28

Complete each of the problems below. Remember to show all of your work.

1. Complete problem 4 from section 6.3 in the text.

2. Complete problem 6 from section 6.3 in the text.

3. Complete problem 12 from section 6.3 in the text.

4. Complete problem 16 from section 6.3 in the text.

5. Find the general solution to the differential equation

$$\frac{dy}{dx} = 3y.$$

   (Assume that $y > 0$.)

6. Solve the separable initial value problem

$$\frac{dy}{dx} = 3x^2y + 6xy, \quad y(1) = 43e^4.$$

   (Assume that $y > 0$.)

7. Solve the separable initial value problem

$$\frac{dy}{dx} = \frac{\cos x}{y}, \quad y\left(\frac{\pi}{2}\right) = \sqrt{2}.$$

   (Assume that $y > 0$.)